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ABSTRACT

Business can support high-quality teaching by providing professional development efforts that provide teachers with knowledge of the changing workplace. At the policy level, business can take the following steps: ensure that teachers have a major or are certified in the content area in which they are teaching; support high-quality alternative routes to certification; and provide incentives and assistance for teachers to achieve advanced certification. The following actions can be taken at the practice level: bring teachers into the workplace through internships; help teachers integrate the knowledge they gain about the workplace into classroom lessons that supplement and reinforce traditional textbook learning; provide fee support for individual teachers seeking National Board Certification; work with schools of education to improve pre-service teacher education; and share business expertise with educators in areas such as continuous improvement and use of technology. Business can also work with schools of higher education to design more effective preservice and inservice teacher education programs. At both the state and local levels, business-education partnerships are providing a variety of professional development experiences that are enhancing teachers' understanding of the workplace and helping them identify ways to integrate their experiences into their own curriculum development. (Appended is a discussion of what constitutes effective professional development.) (MN)

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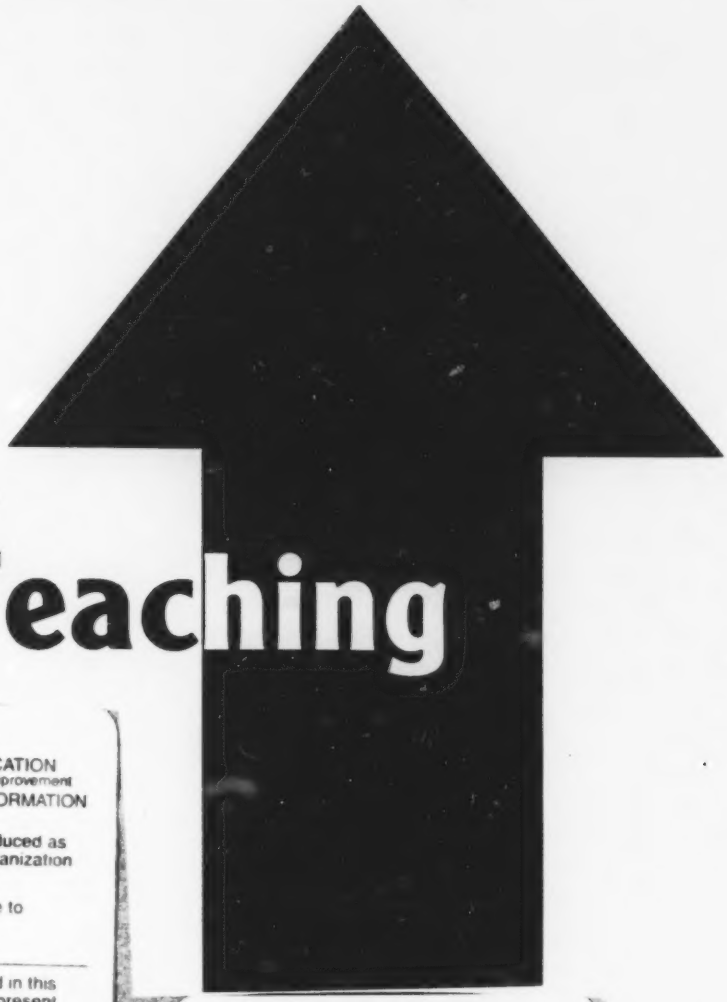
ED 424 395

IMPROVING THE Quality OF Teaching

The Business Role



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THE TIME IS NOW:

A Call to Action

All students, whether bound for college or work, need to master advanced academic skills. To improve student achievement, it is crucial that we invest in the quality of our teachers.

Now is an excellent time to do so. Approximately half of our nation's 2.7 million teachers will retire in the next decade. This fact, combined with the rapid growth in student population, means that, using the most conservative estimates, the nation will need to hire at least 2 million teachers over the next ten years. With so many new teachers entering the nation's classrooms, quality professional development efforts will significantly improve the way America's students are prepared for their lives. By investing in professional development for educators, business ensures that workplace knowledge and real-life curricular applications are being communicated directly to students.

Business leaders must support policy decisions within their communities that promote quality teaching. In practice, business leaders must open their doors to educators in order to provide teachers with new insights into the skills needed to succeed in today's workplace. As part of the "Successful Strategies" series, this BCER brochure provides business leaders and coalitions with information and resources they can use to support academic achievement in their own communities.

Primary research and writing for this brochure was completed by Elizabeth Pauley with support from Anne Castle, Shannon Dunphy, and Karen Larson. Graphic layout was done by Bill Wright at Clark's Litho. We would like to thank our reviewers: Tamra Busch-Johnson, Business Education Compact; Richard Cole, Connecticut Academy for Education; Chris Dreibelbis, Committee for Economic Development; Lee Doyle, BellSouth Corporation; Kathy Eneguess, Business & Industry Association; Allen Goody, Vital Link–Orange County; Nancy Hartman, Somerset/Hunderdon Business and Education Partnership; Dawn Krusemark, American Federation of Teachers; Robert S. Morgan, The Council of Growing Companies; Barry K. Rogstad, American Business Conference; Barbara Volpe, Public Education & Business Coalition. For more information about the "Successful Strategies" series or to inquire about additional BCER resources, please contact Shannon Dunphy (202/289-2918) or Karen Larson (202/289-2903).

Overview

In its report, *Doing What Matters Most: Investing in Quality Teaching*, the National Commission on Teaching and America's Future asserted that "without a sustained commitment to teachers' learning and school design, the goal of dramatically enhancing school performance for all America's children will remain unfilled." (Darling-Hammond, L., p. 1) This report commented on the dire need to move the issue of teacher quality and preparedness to the front of our nation's education reform efforts. The Commission stated that teacher preparation and professional development must be reinvented and teacher recruitment must be overhauled to put qualified teachers in every classroom. Business can and must play a critical role in supporting these efforts.

Although no state will permit a person to write wills, practice medicine, fix plumbing, or style hair without completing training and passing an examination, more than 40 states allow districts to hire teachers who have not met basic requirements. Most states pay more attention to the qualifications of veterinarians treating America's cats and dogs than to those of the people educating the nation's children and youth.

— National Commission on Teaching and America's Future

Recognizing the connection between the quality of teaching, student achievement, and successful workplace performance, many business leaders and coalitions are spearheading efforts in policy and practice to help improve the quality of teaching. These efforts include:

- partnering with the National Board for Professional Teaching Standards (NBPTS) to increase the number of National Board Certified Teachers;
- bringing educators into the workplace to learn about changing skill requirements and the growing importance of academic mastery;
- helping to establish teacher professional development centers that provide ongoing training;
- supporting teacher-training programs at colleges and universities (pre-service and certification programs); and
- assisting educators in developing curriculum and instructional strategies for students (as part of teachers' on-going / in-service training).

DID YOU KNOW?

By 2007, student enrollment will grow to 54.3 million, up from about 50 million in 1995.

National Center for Education Statistics. *Projections of Education Statistics to 2007*. Washington, D.C.: U.S. Department of Education, 1997.

Teachers who are exposed to workplace skill requirements will derive benefits that will translate into more relevant classroom learning. This booklet highlights the business role in preparing teachers with knowledge of the changing workplace. As the following examples demonstrate, while there is no one way for business leaders to work with teachers, it is important that professional development efforts be strategically aligned with systemic education reform.

DID YOU KNOW?

Using the most conservative estimates, the nation will need to hire at least 2 million teachers over the next ten years.

National Center for Education Statistics. *Projections of Education Statistics to 2007*. Washington, D.C.: U.S.Department of Education, 1997.

To Support Quality Teaching

At the Policy Level, Business Can:

Ensure that teachers have a major or are certified in the content area in which they are teaching.

Vast numbers of teachers are teaching subjects in which they have neither a college major or minor. In the field of science for instance, nearly 40 percent of teachers have neither a major or minor in science. In urban school districts, close to 50 percent of teachers are "out-of-field." Yet studies show that students achieve best when their teachers are experts in the content and subjects being taught. Business can support policy initiatives that enable and ensure content area specialists will be teaching in their field of expertise.

"How can we possibly serve the nation's children well if more than 100,000 graduates of education programs nursed by their professors' vision enter the nation's classrooms each year prepared for an ideal, but unarmed for the reality?"

— **Wadsworth, D., *Different Drummers: How Teachers of Teachers View Public Education*: Public Agenda, 1997 p. 29**

- **Support high quality alternative routes to certification (such as *Teach for America* and *Troops to Teachers*) that enable talented individuals to become teachers.**

As the need for more highly qualified teachers grows, school districts recognize the need to attract a wide range of talented, enthusiastic individuals who are highly literate and capable of teaching our children. Many have created, or are in the process of creating, alternative routes to teaching that open the classroom doors. Today, "alternative certification" refers to a wide range of programs: some are highly selective, with rigorous standards and provide excellent training for teaching while others are quick and easy "emergency" measures with little commitment to quality or results. Business leaders and coalitions should support programs that have rigorous standards, assessments, and accountability measures.

- **Provide incentives and assistance for teachers to achieve advanced certification from the *National Board for Professional Teaching Standards* and urge states and localities to institute incentives and rewards supportive of *National Board Certification*.**

To strengthen the quality of teaching, business must support the development and use of high performance standards for teachers. Teachers who seek and achieve National Board Certification should be recognized for their efforts. Business leaders and coalitions can advocate for initiatives that reward teachers who participate in and/or earn National Board Certification. Business can support policy changes that offer salary supplements for Board Certified teachers.

To Support Quality Teaching In Practice, Business Can:

Articulate the levels of academic achievement in core curricular subjects that are required for success.

Business must communicate clearly and regularly the academic skills and knowledge required for success in the workplace. Open communication channels will help ensure that academic standards and curriculum reflect the changing demands of the workplace.

- **Bring teachers into the workplace through internships.**

Content knowledge is not the only challenge facing teachers. In order for young people to be competitive in today's workforce, it is more important than ever that they learn how to apply the skills and knowledge they learn in school in their careers. After witnessing advanced academic skills being applied in many workplaces, teachers gain new insights into the skills needed to succeed and new methods for teaching which motivate students to learn.

Yet many teachers (and education professors) seldom have left the academic environment, going straight from being a student to teaching them. As a result, educators are often unaware of how these advanced skill requirements are applied in the workforce, therefore translating these skills into classroom learning becomes a challenge. A critical component of preparing students to succeed on the job is preparing teachers with the knowledge to teach them and an understanding of how that knowledge is used beyond the school walls.

DID YOU KNOW?

In the United States, only 52 percent of education dollars are spent on instruction and only 43 percent of education staff are classroom teachers. In other industrialized nations approximately three-fourths of education resources are spent directly on instruction, and classroom teachers represent from 60 to 80 percent of all staff.

Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching*. New York: The National Commission on Teaching and America's Future. 1997.

- **Help teachers integrate the knowledge they gain about the workplace into classroom lessons that supplement and reinforce traditional "textbook" learning. Assist teachers in developing rich curricula.**

In addition to clearly articulating workforce requirements for new employees, business partners can advise and reinforce educators in implementing higher academic standards for all students.

- **Provide fee support for individual teachers seeking National Board Certification.**

The fee for assessment is $2,000. At least $500 of this fee is due with a teacher's application. Employers can "adopt" a NBPTS candidate and pay or fundraise for his or her fees. In addition, business leaders can lend technical assistance, such as the use of computers and video cameras, to help candidates prepare portfolios.

- **Work with schools of education to improve pre-service teacher education.**

While preparing to become teachers, candidates should have the opportunity to observe and learn a wide range of teaching strategies. By contributing to pre-service training, business can help ensure that the training for new teachers meets rigorous academic standards and reflects the demands of the workplace.

- **Share business expertise with educators in areas such as continuous improvement, the use of technology, etc.**

Business leaders can share the critical resource that many companies take for granted: the capacity to design management systems that transform organizational performance. For example, businesses and coalitions can work with schools and school districts to use the Baldrige criteria as their organizational performance assessment.

DID YOU KNOW?

More than one-quarter of newly hired public school teachers in 1991 lacked the qualifications for their jobs, and nearly one-fourth of all secondary teachers did not have even a minor in their main teaching field.

Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching*. New York: The National Commission on Teaching and America's Future, 1997.

The Business Role:

Improving Pre-Service Training

Studies have shown that teacher quality has great impact on student learning. Improving teacher quality will directly raise student achievement. By working with schools of higher education to design more effective teacher training programs, business can help strengthen the preparation of new teachers. Pre-service teachers need to observe and experience a diversity of teaching methods that address a diversity of learning styles.

Many business-education coalitions have begun working with colleges and universities in their communities. The following are examples of programs in Connecticut and Maryland that (on the policy level and in practice) are changing the way these states prepare their teachers.

Ultimately, the student is our target audience, but we're not going to revolutionize the way students are taught if we don't enhance teachers' technical abilities. We have a responsibility to give teachers access to New Jersey's resources in science, technology, pharmaceuticals, and telecommunications.

— **Charlie Bartolotta, Regional Vice President, TCI Communications, Inc.**

GUIDELINES FOR PRE-SERVICE TEACHER TRAINING THAT DEFINE A NEW VISION OF EXCELLENCE

The Connecticut Academy for Education in Mathematics, Science and Technology, Inc., is a non-profit organization that partners with industry, business, government, the education community and the community at large. Along with the Connecticut State Departments of Education and Higher Education (CSDHE) the CT Academy recently formed a Task Force of two- and four-year higher education faculty and administrators and charged them with reviewing all relevant national and state mathematics and science educational documents in order to gain a thorough familiarity with "best practice" literature and research in teacher preparation and professional development. From this research, the task force developed seven recommendations that serve as guidelines for the delivery of pre-service teacher preparation that will exceed the baseline standards of existing certification requirements and define a new vision of excellence.

For more information please contact Richard Cole, Executive Director, Connecticut Academy for Education, (860) 346-1177.

DID YOU KNOW?

Half of our nation's 2.7 million teachers will retire in the next decade.

National Center for Education Statistics. *Projections of Education Statistics to 2007.* Washington, D.C.: U.S. Department of Education, 1997.

"My business mentor, Dr. Bill Sacco, co-founder of ***Tri-Analytics, Inc. (TAI)****, shared many insights he gained during his career as he guided my internship experience.*

My internship work focused on preparing lesson plans for middle school students that utilized information from TAI medical databases . . . . The rational for using the databases as a springboard for instruction is that, because the lessons draw upon real world situations, mathematics and science lessons will be less abstract and more compelling motivators for students to become lifelong learners.

The key features of the lessons are that they rely on mathematical skills that students have previously mastered and they mimic the real world contexts in which these skills are applied. The lessons require students to plot points on a graph (coordinate geometry), relate data to given formulae (algebraic algorithms), and use the results to draw conclusions (inferential statistics) about patient injury and outcomes. These concepts are reinforced through practical application.

My intention in writing the lessons was to simplify the mathematics content so that students could easily recognize the mathematical principles they were using. Several of the lessons require students to work in teams and build cooperative skills that are valued commodities in the business world.

My long-term plan is to devise other lesson units based on functions of local businesses in my community. After completing these lessons with my class, I will arrange a field trip to each business to provide my students opportunities for further reinforcement of our classroom activity. An added advantage of this type of instruction is that it serves to build bridges of cooperation and support between the school and the business community . . . . Education can become a dynamic experience for both myself, as a future educator, and for students as future business-people."

— **Deborah Edmonds,**
Teacher,
Maryland Collaborative for Teacher Preparation,
Program Participant & Intern at Tri-Analytics, Inc.

DID YOU KNOW?

Only 500 of the nation's 1200 teacher education schools meet common professional standards.

What Matters Most: Teaching for America's Future. NCATF, September 1996.

UNIVERSITIES & BUSINESSES WORKING TOGETHER TO PREPARE MATH & SCIENCE TEACHERS

The Maryland Collaborative for Teacher Preparation (MCTP) is an undergraduate program associated with universities, colleges and research centers throughout the state of Maryland. Its intent is to equip highly competent prospective teachers of grades four through eight to teach mathematics and science in ways that foster exciting and challenging learning environments for all students. The program introduces future teachers to standards-based models of mathematics and science instruction and provides courses and field experiences that integrate mathematics and science. As part of the program, MCTP provides workplace internships involving genuine research activities.

Summer research internships offer prospective teachers the opportunity to gain experiential knowledge in mathematics and science. Interns' experiences involve reporting research outcomes or reflecting on ways in which to translate the research experience to classroom settings. Internship site offerings are at businesses, college and university campuses, government and industrial research labs.

For more information please contact Karen Langford, Associate Director, Maryland Collaborative for Teacher Preparation, (301) 405-1261.

DID YOU KNOW?

States that consistently lead the nation in achievement have all made longstanding investments in the quality of teaching. Long-time leaders – Minnesota, North Dakota, and Iowa – are among the 12 states that have state professional standards boards which enacted high standards for entering teaching. Other high-scoring states like Wisconsin, Maine, and Montana have also enacted rigorous standards for teaching and are among the few that rarely hire unqualified teachers.

Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching*. New York: The National Commission on Teaching and America's Future. 1997.

The Business Role:

Improving In-Service Teacher Training

At both the state and local level, business-education partnerships are providing professional development experiences through teacher training centers, summer internships, site visits, workshops and mentoring programs. These programs enhance educators' understanding of the workplace and delineate ways to integrate these experiences into their own curriculum development. To date, several business coalitions within the **Business Coalition for Education Reform (BCER)** network are leading these efforts.

"The intent [of the Institute] is hands-on experience, and how science relates to the real world. Students and teachers both get a chance to see and learn how science applies to life each day."

— *Mary Ribeiro, [former] Executive Director of the Somerset/Hunterdon Business Education Partnership*

HANDS-ON LESSONS LINKING CLASSROOMS WITH SCIENTISTS & ENGINEERS

In New Jersey, **The Science Alliance**, sponsored by **Somerset/Hunterdon Business and Education Partnership**, is an education/industry collaboration striving to meet the increasing need for a scientifically literate population and for individuals interested in pursuing science/technology careers. Supported by 102 companies, the Science Alliance works with K-12 teachers to develop unique science teaching modules to enhance existing curricula. The goal? To construct "hands-on" science lessons which supplement existing curricula, while establishing a link between scientists, engineers, and teachers.

Working partnerships among scientists, engineers, technicians, and educators have created over 400 innovative, consumer-relevant, hands-on science modules that integrate real world applications with textbook theory. For example, local **Johnson & Johnson** scientists worked with the Alliance to develop "Making Body Powder: An Introduction to Material Science" and "Microbes in Our World." These and many other modules are directed toward elementary and middle school students in an effort to foster students' interest in science at a young age.

To ensure that these innovative teaching classroom modules are successfully integrated into the classroom, the Science Alliance also sponsors a Summer Institute. This four-day workshop, with the assistance of industry scientists and engineers, inform teachers about the modules and ways to integrate an "enhanced" curriculum to all students. As stated by Donald Bowers of **Ethicon, Inc.**, an affiliate of Johnson & Johnson, "Scientists and engineers in New Jersey's corporate community team up with teachers to turn science theory into "hands-on, minds-on" activities for students."

For more information please contact Nancy Hartmann, Executive Director, Somerset/Hunterdon Business and Education Partnership, (908) 725-6032.

A PUBLIC/PRIVATE PARTNERSHIP TO SUPPORT QUALITY TEACHING

The Public Education & Business Coalition (PEBC) invests in teacher training as a means to raise student achievement. PEBC has over 50 teacher trainers who work in schools helping teachers to improve their instructional practices. Using the latest research in teaching and learning as its foundation, the training team has expertise in reading, writing, math, the use of technology in instruction, information literacy, developing student research skills, and school-to-career strategies such as integrated curriculum, project based learning, and work-based learning. Private sector business and foundation partners and the school districts that participate share the cost of this professional development.

Schools apply to participate in PEBC's professional development programs. Once selected, a PEBC trainer is assigned to the school which then receives 20 days of professional development per year for at least two years, and a transition year with at least 10 days of training. Professional development options the school may choose include: classroom coaching, teacher study groups, summer institutes, Saturday workshops, parent seminars, facilitated visits to other schools, and debriefing sessions. In the classrooms, the teacher trainers work with the teachers to support and enhance good teaching practices. Program evaluation has shown increases in student achievement as a result of the professional development.

As part of every professional development program, each school creates a Leadership Team that includes the principal, teachers, the librarian, a PEBC teacher trainer, parents and students. This team reviews the school's assets in the area of best teaching and learning practices, and with the help of the PEBC trainer, engages in a process of mapping those assets. From this, the team creates a strategic plan for professional development to build assets where they are needed and to use assets where they exist. The team monitors the school's progress toward that plan and revises it when necessary.

For more information please contact Barbara Volpe, Executive Director, Public Education & Business Coalition, (303) 861-8661.

DID YOU KNOW?

According to the National Association of Business Economists, 50 percent of companies surveyed in January 1997 reported skilled labor shortages–nearly doubling since a survey in July, 1995. Northern VA high-tech companies report 18,000 job vacancies representing $500 million in lost wages.

Opening the Workplace to Learning, National Alliance of Business, 1997.

BUSINESS AND EDUCATION CREATING AND SUPPORTING A STAFF DEVELOPMENT ACADEMY

Developed in 1993 the **Mayerson Academy** is a state-of-the-art-training center whose primary customers are employees of the Cincinnati Public Schools. The mission of the Mayerson Academy is two-fold: to provide high-quality professional development for educators and to support urban school systems as they strive to transform themselves into cutting edge schools. The academy has up-to-date technology and well-appointed surroundings, but it's the range and caliber of professional development itself that have sustained the interest of many district employees. Currently, the academy is directing its efforts toward "building-wide" initiatives as it develops programs to help teams of teachers.

The business community raised 3.5 million dollars to get the Mayerson Academy started. **Mr. John Pepper, CEO** of **Procter and Gamble**, and his wife, along with **Mr. and Mrs. Manual Mayerson** gave significant personal contributions together with the **Procter and Gamble Foundation**. In addition, the Board of the Mayerson Academy is made up primarily of business people, including **Durk Rorie**, the owner of **United Air Specialists**, **W.W. (Bud) White**, Retired Executive **Chiquita, Co.**, and **Scott Borgemenke**, Executive Director of the **Cincinnati Business Committee**, an organization of CEOs from the 25 largest businesses in Cincinnati. Education members include the Superintendent of the Cincinnati Public Schools, the President of the Teacher's Union, and the Chair of the School Board who are elected by virtue of their position.

The Mayerson Academy focuses on 5 key areas of professional development: Effective Training, Effective Leadership, Effective Schooling, Effective Support, and Effective Partnering. The academy recognizes that teachers, administrators, and support staff are customers. Reflecting this customer focus, the doors of the Academy are open for business from 8:00 am to 9:00 pm, Monday through Saturday, fifty weeks per year.

The Mayerson Academy recognizes that its major challenge is to support school staff in their mission to positively impact students. The academy treats their customers with the dignity and respect professionals deserve, knowing that they, in turn, will treat their students in a similar way.

For more information please contact Larry G. Rowedder, President, The Mayerson Academy, (513) 861-9684.

DID YOU KNOW?

Elementary school students who are assigned to ineffective teachers for three years in a row score significantly lower on achievement tests than those assigned to the most effective teachers.

Darling-Hammond. L. *Doing What Matters Most: Investing in Quality Teaching*. New York: The National Commission on Teaching and America's Future, 1997.

NEW SCHOOL RECORDS AND ASSESSMENTS HIGHLIGHTING WORKPLACE SKILLS

Vital Link-Orange County brings educators, business leaders and students together to link high scholastic achievement with real business skills and to motivate high school students to learn. The bottomline message is: "Let's make high school count for our students, for our businesses, for our country."

Vital Link creates regular opportunities for business-education interaction and helps business leaders articulate their standards and expectations for employment. Thanks to Vital Link, Orange County business leaders came together seven years ago to articulate the skill needs for entry-level jobs and establish entry-level skill criteria that were based on real achievement levels rather than time spent in school. Once the skills were identified, Vital Link created an **Employability Transcript**. The Employability Transcript records students' achievements and skills that employers identified as necessary, including information on career skills such as computer applications, conflict resolution, group participation, speaking, listening, and punctuality, along with students' workplace experiences, i.e., internships and job shadowing.

Working with teachers during the summer, Vital Link developed a curriculum, complete with scenarios and assessments, that evaluates student progress toward the "soft" skills for which business is looking. Vital Link provides training classes for teachers on how to implement the curriculum. In order to go beyond only addressing the needs of individual teachers, schools are encouraged to send teams of teachers to the training, where they receive a set of curriculum guides and assessment books.

Together, business and educators provide curriculum and classroom activities relevant to the workplace. Through its investments in teacher training, Vital Link-Orange County continues to serve the common interests of business and education in Orange County.

*For more information please visit **www.planningcenter.com/vitallink**, or call Allen Goody, Executive Director, Vital Link-Orange County, (714) 833-9103.*

DID YOU KNOW?

When pressed to name the one change that would be the most important in helping them learn 63% of high school students said, "Having more good teachers."

Getting By: What American Teenagers Really Think About Their Schools. Public Agenda, 1997.

RECOGNIZING EXCELLENCE IN TEACHING

The **National Board for Professional Teaching Standards** was instituted in 1987 to establish rigorous standards and assessment for certifying accomplished teaching. A majority of the Board's sixty-three members are outstanding classroom teachers; the remaining members include school board members, governors, legislators, administrators, and teacher educators. Veteran teachers complete a yearlong portfolio that illustrates their teaching through lesson plans, samples of student work over time, videotapes and analyses of their teaching. They also take tests of content and pedagogical knowledge that tap their ability to create and evaluate curriculum materials and teaching situations. The Board's standards are being used by some school districts to guide ongoing professional development and evaluation as well as certification of accomplished practice.

— Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching.* New York: The National Commission on Teaching and America's Future. 1997.

For more information please visit ***www.nbpts.org****, or contact the National Board for Professional Teaching Standards, 26555 Evergreen Road, Suite 400, Southfield, MI 48076, Tel: 248-351-4444.*

BUSINESS LEADERS REWARDING EXPERTISE

The Public School Forum of North Carolina, a coalition of state business leaders, elected officials, and educators whose mission is to "create a system of North Carolina schools which is second to none" recently supported major legislative changes creating 12 percent pay incentives for teachers who receive certification from the **National Board for Professional Teaching Standards**. By rewarding NBPTS certified teachers, other current and prospective teachers will be encouraged to seek the same certification.

For more information contact John Dornan, Executive Director, The Public School Forum of North Carolina, (919) 781-6833.

DID YOU KNOW?

Over 50% of those trainers of teachers who have been a K-12 teacher have not taught in at least 16 years.

Getting By: What American Teenagers Really Think About Their Schools. Public Agenda. 1997.

Business Providing Internships for Teachers

One effective way to communicate workplace skills to students is to bring teachers into the workplace. Internships provide teachers with a firsthand look into today's workplace, and a better understanding of the ways in which students will be asked to apply their academic skills. Upon return to their classrooms, teacher interns have renewed insight into corporate culture, business needs and the skills necessary for workplace success. In addition, the experience enables teachers to provide students with real life applications to academic subjects.

It's not up to the business community to tell teachers how to teach. But we do want to have faculty understand the pace at which the everyday business functions in a global economy.

— *Kathy Eneguess, Vice President, Business and Industry Association of New Hampshire*

To maximize the employer and educator experience, before teachers arrive at the workplace, employers need to work with other employers and school administrators to set program expectations for teacher and student learning. During the internship experience, employers coach all employees on program expectations for "educators in the workplace." Employers work with educators on "teaming," the use of technology, and workplace expectations for knowledge. After the internship, employers assess the return on business investment by: reviewing curriculum materials for incorporation of business skills providing, company assistance in training educators at all levels, and gathering employee feedback to strengthen program continuation.

Business groups, such as the **Berks Business & Education Coalition,** sponsor of the **Berks County Educator Internship Program**, have found many benefits to participating in teacher internship programs. Dorothy McKelvy of **Carpenter Technology** reported that David Blair, a local math teacher and participant in an internship "assisted and supported the projects at Carpenter with ease. David moved easily among the tasks, which ranged from crunching a considerable amount of data, to helping design employee communications to evaluating external consultant proposals. His advice and comments were right on—he helped me to do and consider things not previously anticipated."

Perhaps the most important benefit, and the bottom line, is that by providing internships for teachers, business leaders help teachers to share workplace knowledge and real-life academic applications with their students. This means students have a better awareness of what skills they need to prepare for college or the workplace, which increases student motivation. By investing in professional development for educators, business helps teachers and students understand that success after high school depends on mastery of core academic subjects. The following examples highlight a variety of teacher internship and externship experiences.

TRANSFORMING TEACHING AND LEARNING: EDUCATORS IN THE WORKPLACE

In response to the workplace needs of the region's growing fiber optic and other high-tech industries, Catawba County Schools (in Newton, North Carolina) paired two high school teachers with **Siecor, CommScope** and **Alcatel NA** in a year-long sabbatical designed to develop expertise and create two new high school courses that use technology as an educational tool. In Fleming County Schools, Flemingsburg, Kentucky, eight percent of the school district's teachers participated in two-week internships. Throughout the school year, participants conducted quarterly study groups, peer observations, professional development and sharing sessions. Together, these components turned lessons learned into real changes in the system's curriculum and pedagogy.

These are two programs within **BellSouth Foundation's** initiative, **Transforming Teaching and Learning: Educators in the Workplace**. Eight "break-the-mold" school-business collaborations received grants from BellSouth to support teams and groups of teachers spearheading curriculum and school change in their social system.

Why this approach? BellSouth's investment focuses on changing what teachers actually teach and how they do it. An investment in a single teacher can have immediate and widespread impact on as many as 125 students a year. An investment in a group of teachers working together magnifies that return. Expanding the investment to include system administrators and employers spreads returns even farther—resulting in more beneficial curricula and instruction.

SUCCESS FACTORS

In the grantmaking process, BellSouth chose proposals that demonstrated certain characteristics in the planning, implementation and follow-up stages of a workplace internship experience. As the programs have progressed, these characteristics evolved into nine success factors that provide for effective teacher workplace programs and sustain a supportive environment for change. Three of these factors can be applied overall:

Teacher Teams: groups of teachers from the same school should participate in workplace internships at the same time.

Administrative Commitment: school administrators should view teacher internships as a significant vehicle for curriculum change and school reform, and should reflect this view in the school system's strategic plan.

Employer Commitment: The community of employers involved should recognize schools as the "preferred supplier" of knowledgeable and skilled employees and that partnering with schools is the best solution to meeting workforce preparation demands.

For more information please contact Lee Doyle, Director External Affairs, BellSouth Corporation, (404) 249-2103.

PROVIDING SUMMER INTERNSHIPS FOR OREGON'S K-12 TEACHERS

Business-Education Compact (BEC) promotes "educational excellence, relevancy, and expanded learning opportunities for all educators – all students." More than 1800 educators participate in BEC educational initiatives, which, in turn, has impacted more than 125,000 students. Through its **Educator Excellence Program**, BEC manages structured summer internships for Oregon's K-16 educators that help them to increase their understanding of today's workforce needs. Educators who participate in these internships are more likely to be equipped to apply work-based experiences to their classroom settings. These summer internships have influenced student achievement to help students "understand why they are learning and what they need to know for successful employment."

"Everybody wins in this situation. Businesses get a project completed and come to see teachers as professionals. Teacher interns get an inside view of business and go on to become spokespersons and curriculum development leaders. Students are the recipients of whatever modifications or adjustments a teacher would make in their curriculum."

— Susan Castagna, The Educator Excellence Program Manager

"Our intern gave us insight into the issues that educators deal with and the final outcome of a written curriculum."

"It enlightened me as to the skills needed by employers and really reinforced the importance of education for my students."

— Business Education Compact, 1995 Summer Educator Internship Business Evaluation Survey Results. Beaverton, Oregon.

The summer internship program begins with an orientation, during which time interns (educators) and their business mentors outline mutual goals and set clear expectations. Together, they develop a required "Action Plan," that "documents how you [the intern] translate your summer business experience into something applicable to students in your classroom. It's a practical application of skills and knowledge gained." (*Bringing the World into the Classroom: Business Education Compact - Educator Internship Guide*).

Interns are encouraged to engage in reflective thinking in order to identify how their own practical work-based application will be successfully integrated into a classroom setting.

For more information contact Tamra Busch-Johnson, Executive Director, Business Education Compact, (503) 646-0242.

DID YOU KNOW?

A New York study found that teachers' qualifications account for more than 90 percent on the variance in students' reading and mathematics scores.

Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching*. New York: The National Commission on Teaching and America's Future, 1997.

IDENTIFYING AND LEARNING THE ESSENTIAL SKILLS AND ATTITUDES OF SUCCESSFUL AND HIGH-ACHIEVING EMPLOYEES

Last spring fourteen New Hampshire educators were selected as the first School-to-Career Fellows in a one-year pilot program sponsored by the **New Hampshire School-to-Career Network**, the **Business & Industry Association** and the **University of New Hampshire Department of Education**. The Fellows took part in a five-week summer program, which focused on identifying and learning the essential skills and attitudes required of successful and high-achieving employees. Part of the program consisted of a three-week on-site work assignment under the supervision of a Workplace Mentor. At the site, Fellows were asked to use their professional training to complete a product useful to the host organization. The other two weeks of the program consisted of a new graduate seminar, which was designed and taught by professors at the University of New Hampshire. Each Fellow received a $2,000 stipend from New Hampshire's federal STC grant.

In creating the pilot program, the three sponsor groups looked to existing professional development programs to identify key components for success. Among those key components are: advance planning, "buy-in" from school administration, connection at senior management levels, and inclusion of a substantive academic component.

During the school year, the Fellows work to bring the lessons learned at their summer work sites into their classrooms. In addition to implementing learning projects with workplace applications, Fellows are available to work with and provide technical assistance to their local STC teams.

Tammy Andrew, a Milford High School science teacher, spent her internship with **Exploration Physics International, Inc.** working to develop a radio receiver that may eventually be used to study Martian environments. Through her work at EXPI, Andrew can now, *"bring dust storms into the classroom through graphs and plots."*

Don Watson, a science teacher at Dover High School, described his experience with **Scott Shillaber** of **Sanborn, Head and Associates** as *"exciting."* Says Watson: *"It was a rich source of ideas, how problems were solved, skills required at a [hazardous waste] site...it all fits with my curriculum."* Shillaber says the company's experience was positive, *"on a couple of levels. It was instructive to understand his perspective as a teacher... [and he was] productive. We derived benefit."*

The results? New Hampshire businesses from **Bell Atlantic** to **Public Television** to **Exploration Physics International, Inc.** jumped at the chance to participate in the program. At the end of the five weeks, all of the teaching fellows felt that they had a greater understanding of the SCANS Competencies, and the ways in which the SCANS skills are applied at the worksite and to students' school learning. On average, the participants felt their summer internships very significantly contributed to their development as teachers and deepened their understanding of the skills required in the workplace.

For more information please contact Kathy Eneguess, Vice President, Business & Industry Association, (603) 224-5388.

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A NEW TWIST: HOW EMPLOYERS AND EDUCATORS CAN WORK TOGETHER TO IMPROVE STUDENT ACHIEVEMENT

This toolkit provides an array of information and resources to improve educator preparedness by bringing teachers and other educators into the workplace. With employers playing a leadership role, teachers can experience today's workplace and make learning more relevant for students. Some of the components in the portfolio include:

The Challenge: *Overcoming Inertia in U.S. Student Achievement.* This brochure makes the case for bringing employers and educators together to improve student achievement.

The Solution: *Bringing Educators and Employers Together for Workplace Adventures.* This booklet outlines several ways of opening up workplaces to teachers, principals, guidance counselors and other educators. It features the actual experiences and lessons learned from a number of school-business partnerships, plus step-by-step guidelines for creating a successful Educator in the Workplace program.

The Payoff: *Learning That Keeps Students on the Edge of Their Seats.* To be truly effective, an Educator in the Workplace program must enable teachers to improve their instructional repertoire and enable students to achieve at higher levels. This brochure provides sample projects that combine academic standards and real-world needs that teachers can use in their classrooms.

For more information contact the National Alliance of Business, 1201 New York Avenue,NW, Suite 700, Washington, D.C. 20005, (800) 787-2848.

DID YOU KNOW?

An analysis of 60 studies found that student achievement goes up significantly more when investments are made in teacher education, professional training or experience, and salaries than when class sizes are reduced.

Darling-Hammond, L. *Doing What Matters Most: Investing in Quality Teaching.* New York: The National Commission on Teaching and America's Future, 1997.

Appendix

What is effective professional development?

When students are active, inquiring learners they learn more, retain it longer, understand it more deeply, apply it more effectively, and experience the excitement of exploration and discovery. For this reason, schools must be staffed with teachers and administrators who are qualified, well-prepared, and effectively helping students learn. This means that in addition to a deep content knowledge of the subjects they teach, teachers need to possess a better understanding of a wide array of teaching strategies that will help students achieve at higher levels. Additionally, teachers need a clear understanding of the ways in which students will be expected to apply academic skills once they leave school.

Unfortunately, many of today's professional development pre-service and in-service programs do not strengthen teachers' skills and knowledge. With respect to undergraduate teacher trainers, a recent Public Agenda survey indicates that a chasm exists between what education professors teach and what classroom teachers, parents and students say they need. Education professors often place more emphasis on theory and learning ideals, for example, and not enough attention on

GUIDELINES FOR PROFESSIONAL DEVELOPMENT

Professional development must be a dynamic process that requires educators to continually reflect on their teaching, strengthen their knowledge of subject matter, and perfect their pedagogical skills.

Dynamic professional development will:

Deepen educators' subject matter knowledge – As the standards in courses are raised and watered-down courses eliminated, students will be taking more advanced courses and will be expected to learn more. Many teachers who have become familiar with teaching lower-level courses will shift to teaching higher-level courses. Therefore, educators will need to deepen their content knowledge in order to teach complex subject matter.

Expand educators' repertoire of teaching strategies – As noted earlier, lifting the achievement of students who have not traditionally flourished in school will require teachers to draw on a broader range of effective teaching strategies, including more use of applied learning. Teachers will need exposure to these techniques, including an understanding of how, why and under what circumstances they are effective. It is essential for teachers to understand the research that supports the new teaching practices. But, that alone is not sufficient. Teachers cannot be expected, based on abstract theory, to invent a year's worth of new lessons from whole cloth. Rather, excellent collections of lessons, units and courses that incorporate applied learning should be made available to teachers.

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Professional development should be substantially focused on enabling teachers to effectively use and build on these materials. At its best, this kind of professional development will include time for teachers to brainstorm and talk with colleagues about their experiences. This will need to be done in a way that engages educators in learning about and studying their own teaching in order to perfect their methods. Also, teachers will need release time to observe quality teaching by their peers.

Be an on-going, coordinated effort – The evidence is overwhelming that the most effective professional development programs are those that provide opportunities for teachers to learn something new, to practice it in the classroom, and to receive coaching on it. One-shot trainings that assume that knowing something new means you can and will successfully apply it in the classroom will not fill the bill. Educators will need to continue to share their successes and failures and fine-tune their methodologies as students and curriculum change.

Be a priority for the school, district or regional entity – Professional development initiations will not work unless the time and resources are available for teachers to observe exemplary teaching and work collegially to upgrade their skills. Japanese teachers, for example, spend roughly 40 percent of their working day on professional development and collegial work, compared with only 14 percent for American teachers.

Offer paid summer internships and other opportunities to teachers – Frequently, educators have not had exposure to workplaces and are not familiar with the level of knowledge and skills that so many jobs now require. Internships with local businesses will allow educators to observe employees using academic skills in today's workplaces. This allows educators to speak credibly and with rich examples about the relevance of students' academic study to their future careers. These experiences empower educators to answer students' eternal question: "Why do I need to know this?"

— *Reaching the Next Step: How School-to-Career Can Help Students Reach High Academic Standards and Prepare for Good Jobs. Defining World Class Standards.* Washington, DC: American Federation of Teachers, 1996.

effective strategies of teaching that lead students to a mastery of skills. Indeed, in Massachusetts, over half of all teacher candidates failed the state's spring 1998 certification test, which measured communication and literacy skills and knowledge of a specific subject.

Because of the direct relationship between student achievement and teacher training, the success of professional development efforts must be measured by improved student performance. Good professional development should be clearly defined and evaluated in terms of best practice and student learning, and should be integrated with accountability measures.

Programs must also incorporate appropriate instructional techniques and learning experiences for teachers and other staff. Effective professional development creates an environment in which teachers are challenged to know their subjects more thoroughly and have opportunities to share with colleagues. Teachers must work more closely with colleagues to design curricula and activities that bring workplace examples and applications into the classroom.

BUSINESS COALITION FOR EDUCATION REFORM
1201 New York Avenue, NW
Suite 700
Washington, DC 20005
Telephone: 800-787-2848
Web Site: http://www.bcer.org

The BCER, a coalition founded and managed by the National Alliance of Business, is comprised of 13 national business-led coalitions working in partnership with 350 state and local business-education organizations to improve academic achievement for all students by supporting and expanding business involvement in education at the national, state, and local levels. The BCER supports efforts to: (1) raise academic standards for all students; (2) ensure standards reflect the knowledge and skills needed for workplace success; and (3) help the public understand the critical need for world-class academic standards and necessary changes for school systems to deliver them. Members include: American Business Conference, The Business Roundtable, Business-Higher Education Forum, Chamber of Commerce of the United States, Committee for Economic Development, The Conference Board, Council on Competitiveness, The Council of Growing Companies, National Alliance of Business, National Association of Manufacturers, National Association of Women Business Owners, U.S. Hispanic Chamber of Commerce, Utility Business Education Coalition.

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c/o National Alliance of Business
1201 New York Avenue, NW
Suite 700
Washington, DC 20005
Phone: 800/787-2848
E-mail: info@nab.com
Internet: http://www.bcer.org